

Register Number:

Date:



ST. JOSEPH'S COLLEGE (AUTONOMOUS), BENGALURU-27
M.Sc MICROBIOLOGY – III SEMESTER
SEMESTER EXAMINATION - OCTOBER 2019
MB 9118 – RECOMBINANT DNA TECHNOLOGY

Time: 2 1/2 hrs

Max.Marks: 70

This paper contains 1 printed page and 4 parts

I. Answer any Five of the following

5x3=15

1. Comment on synthetic oligonucleotides.
2. Mention the applications of genomic library.
3. How are RF employed in gene cloning?
4. Write the principle of micro projectile bombardment.
5. Differentiate mini and maxi cells.
6. Define transgenic plants. Give an example.
7. Write a flow chart of CaCl_2 mediated transformation.

II. Answer any Five of the following

5x5=25

8. List the advantages and disadvantages of retroviral vectors.
9. Explain *Agrobacterium* mediated gene transfer.
10. How are cDNA libraries constructed?
11. Write a short notes on chromosome walking.
12. Mention the challenges involved in primer designing.
13. Describe DNA fingerprinting.
14. What are the restrictions and regulations for releasing GMOs into the environment?

III. Answer any Two of the following 2x10=20

15. (a) Describe the mode of action of alkaline phosphatase and polynucleotidyl kinase. 4
(b) Explain plaque hybridization. 6
16. a. Mention the salient features of phagemids and its applications. 5
b. Define microarrays and discuss its applications. 5
17. Explain Sanger method of DNA sequencing and mention the applications of DNA sequencing.

IV. Answer the following

1x10=10

18. This is a special type of vector which has a recognition sequence for attachment of an RNA polymerase SP6 and T7. Name the vector. With neat diagram, mention the properties, screening of recombinants and applications of the vector.